

WHAT IS CLAIMED:

1. A vector for expressing a heterologous gene(s) and/or gene product(s) in a host cell, comprising, at least 5 one insertion site for cloning a selected heterologous gene; a promoter sequence positioned upstream from said gene insertion site, said gene being under the regulatory control of said promoter; the left end replication and packaging elements of the adenovirus-5 genome positioned upstream of said promoter; a eukaryotic splice acceptor and splice donor site positioned downstream of said promoter; and a polyadenylation sequence and region for homologous recombination containing a portion 10 of the adenovirus-5 genome positioned downstream of said insertion site.

15 2. The vector according to Claim 1, wherein said vector is a plasmid.

19 Sub b G 3. The vector according to Claim 1, wherein said 20F promoter sequence is the mouse cytomegalovirus early promoter, or an effective expression promoting fragment thereof.

Sub 4. The vector according to Claim 1, wherein said 25J polyadenylation sequence is the 3' processing site from the mouse  $\beta$ -globin transcription unit.

5. The vector according to Claim 1, wherein said region for homologous recombination comprises the adenovirus nucleotide sequence from 2800-5776.

30 6. The vector according to Claim 2, wherein said plasmid vector further comprises pML vector sequences.

35 7. The vector according to Claim 1, wherein said vector comprises the map as shown in Figures 1(a) or 1(b).

Sub F 8. The vector according to Claim 1, wherein said

vector comprises the nucleotide sequence as substantially shown in Figure 22 (Seq. Id. No. 1).

9. The vector according to Claim 1, wherein said  
5 vector further comprises a separate site for insertion of a  
second transcription unit.

10. A method of producing a recombinant adenovirus expression vector for expression of a heterologous gene(s) and/or gene product(s) in a host cell capable of being infected by said adenovirus comprising:  
a) preparing the vector according to Claim 1;  
b) co-transfected said vector with an adenovirus-5 genome in 293 cells, under conditions which facilitate  
15 homologous recombination between said vector and adenovirus-5, thereby producing a recombinant adenovirus; and  
c) isolating the recombinant adenovirus.

11. A recombinant adenovirus expression vector  
20 produced according to the method of Claim 10.

12. A host cell line or animal infected by the recombinant adenovirus expression vector according to Claim  
11.

25 13. A unicellular host transformed by the vector according to Claim 1.

14. A method for producing a selected protein, comprising, culturing a host which has been infected with a recombinant adenovirus vector according to Claim 11.

30 15. A method for producing a selected protein, comprising culturing a transformed host which has been transformed with a vector according to Claim 1.

16. The vector according to Claim 1, wherein said

insertion site is a cDNA insertion site.

add C2

add 3'

add I<sup>3</sup>